What is claimed is:

1. A digital down converter, comprising:

an input adapted to receive an input signal;

a mixer circuit coupled to the input adapted to down convert the input signal;

a decimation circuit, coupled to the mixer, the decimation circuit adapted to decimate the down converted signal by a factor selected based on a characteristic of the input signal;

a signal conditioning circuit, coupled to the output of the decimation circuit, that conditions the decimated signal;

an interpolator, coupled to the decimation circuit, that increases the number of samples in the conditioned signal; and

a second mixer circuit, coupled to the interpolator, the second mixer circuit adapted to modulate a carrier with the conditioned signal.

2. The digital down converter of claim 1, wherein the decimation circuit includes:

a variable decimator; and

a fixed decimator, bypassably coupled in series with the variable decimator, wherein the variable and fixed decimators are controlled to decimate the down converted signal by a factor selected based on the frequency band used for carrying data in the input signal.

3. The digital down converter of claim 1, wherein the signal conditioning circuit comprises a low pass filter.

4. The digital down converter of claim 1, wherein the signal conditioning circuit comprises a finite impulse response low pass filter.

5. The digital down converter of claim 1, wherein the decimation circuit comprises a decimation circuit that decimates the down converted signal based on the frequency band used to carry data in the input signal.

6. The digital down converter of claim 1, wherein the first and second mixer circuits each include a numerically controlled oscillator.

7. A method for down converting a signal, the method comprising:
mixing the input signal to down convert the signal;
decimating the down converted signal based on a selected decimation factor based on the frequency band used for carrying data of an input signal the selected decimation factor;
conditioning the decimated signal;
interpolating the conditioned signal; and
modulating a carrier with the interpolated signal.

8. The method of claim 7, wherein conditioning the signal comprises filtering the signal.

9. The method of claim 7, wherein conditioning the signal comprises filtering the signal with a low pass filter.

10. The method of claim 7, and further comprising selecting a frequency to down convert with the mixer.

11. A digital down converter, comprising:
an input adapted to receive an input signal;
a mixer circuit coupled to the input to down convert the input signal;
a decimation circuit, coupled to the mixer, the decimation circuit including:
a variable decimator, and
a fixed decimator, bypassably coupled in series with the variable decimator, wherein the variable and fixed decimators are controlled to decimate the down converted signal by a factor selected based on the frequency band used for carrying data in the input signal;

a filter, coupled to the output of the decimation circuit, that conditions the decimated signal;

an interpolator, coupled to the decimation circuit, that increases the number of samples in the filtered signal; and

a second mixer circuit, coupled to the interpolator, the second mixer circuit adapted to modulate a carrier with the filtered signal.

12. The digital down converter of claim 11, wherein the filter comprises a low pass filter.

13. The digital down converter of claim 11, wherein the filter comprises a finite impulse response low pass filter.

14. The digital down converter of claim 11, wherein the first and second mixer circuits each include a numerically controlled oscillator.

15. A digital down converter, comprising:

a plurality of ports;

a plurality of multiplexers, each multiplexer having a plurality of inputs with each input coupled to one of the plurality of ports;

a plurality of digital down converter channels, each channel coupled to one of the plurality of multiplexers; and

a control circuit, coupled to the plurality of multiplexers and the plurality of down converter channels, the control circuit adapted to select a frequency band of a signal received at one of the plurality of ports for processing by each of the digital down converter channels.

16. The digital down converter of claim 15, wherein each of the plurality of digital down converter channels includes:

an input adapted to receive an input signal;

a mixer circuit coupled to the input to down convert the input signal;

a decimation circuit, coupled to the mixer, the decimation circuit adapted to decimate the down converted signal by a factor selected based on a characteristic of the input signal;

a signal conditioning circuit, coupled to the output of the decimation circuit, that conditions the decimated signal;

an interpolator, coupled to the decimation circuit, that increases the number of samples in the conditioned signal; and

a second mixer circuit, coupled to the interpolator, the second mixer circuit adapted to modulate a carrier with the filtered signal.

17. The digital down converter of claim 16, wherein the decimation circuit includes:

a variable decimator; and

a fixed decimator, bypassably coupled in series with the variable decimator, wherein the variable and fixed decimators are controlled to decimate the down converted signal by a factor selected based on the frequency band used for carrying data in the input signal.

18. The digital down converter of claim 16, wherein the signal conditioning circuit comprises a low pass filter.

19. The digital down converter of claim 16, wherein the signal conditioning circuit comprises a finite impulse response low pass filter.

20. The digital down converter of claim 16, wherein the decimation circuit comprises a decimation circuit that decimates the down converted signal based on the frequency band used to carry data in the input signal.

21. The digital down converter of claim 16, wherein the first and second mixer circuits each include a numerically controlled oscillator.

22. The digital down converter of claim 15, wherein each of the plurality of digital down converter channels includes:

an input adapted to receive an input signal;

a mixer circuit coupled to the input to down convert the input signal;

a decimation circuit, coupled to the mixer, the decimation circuit including:

a variable decimator, and

a fixed decimator, bypassably coupled in series with the variable decimator, wherein the variable and fixed decimators are controlled to decimate the down converted signal by a factor selected based on the frequency band used for carrying data in the input signal;

a filter, coupled to the output of the decimation circuit, that conditions the decimated signal;

an interpolator, coupled to the decimation circuit, that increases the number of samples in the filtered signal; and

a second mixer circuit, coupled to the interpolator, the second mixer circuit adapted to modulate a carrier with the filtered signal.

23. The digital down converter of claim 22, wherein the filter comprises a low pass filter.

24. The digital down converter of claim 22, wherein the filter comprises a finite impulse response low pass filter.

25. The digital down converter of claim 22, wherein the first and second mixer circuits each include a numerically controlled oscillator.